SUMMARY ON

ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

OF

Shaurya Ispat Udyog Pvt. Ltd.

[Expansion of Induction Furnace (MS Billets from 30,000 TPA to 3,27,000 TPA), Expansion of Rolling Mill (TMT / Wire Rod/ patra/ and other rerolled products from 30,000 TPA to 3,21,750 TPA), &Coal Gasifier of 1 x 6500 NM^3/Hr]

at

Khasra Nos. 247/2, 247/11, 247/15, 247/17, 270/2, 271/1, 271/3, 271/4, 272/1, 273, 274, 276/5, 276/10, 276/12, 276/13, 276/14, 276/15, 276/17, 276/18, 276/19, 276/20, 276/23, 276/24, 276/25, 276/26, 276/27, 276/29, 276/38, 276/40, 276/41, 276/42, 276/43, 276/44, 319/9, 320/18, 320/42 & 320/47 in Kirna Village, Tilda Tehsil, Raipur District, Chhattisgarh.

Submitted to

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD

Chhattisgarh

1.0 PROJECT DESCRIPTION

ShauryaIspatUdyog Pvt. Ltd.was obtainedConsentTo Establishment (CTE) from CECB vide order No. 1264/RO/TS/CECB/2020 Raipur dated: 10thSeptember 2020 for establishment of Induction Furnaces for manufacturing of 30,000 TPA Hot Billets, Rolling mill through hot charging for manufacturing of 30,000 TPA re-rolled products and Galvanizing unit to manufacturing of 1,00,000 TPA, for the same premises.The construction work of the Induction Furance and Rolling is started.

Now as a part of expansion, company is planning for proposed expansion of Steel Plant – Induction Furnaces with matching LRF & CCM (MS Billets / Ingots/Hot Billets from 30,000 TPA to 3,27,000 TPA), Rolling Mill with hot charging (Rolled Products 30,000 TPA to 3,21,750 TPA) inKhasra numbers 247/2, 247/11, 247/15, 247/17, 270/2, 271/1, 271/3, 271/4, 272/1, 273, 274, 276/5, 276/10, 276/12, 276/13, 276/14, 276/15, 276/17, 276/18, 276/19, 276/20, 276/23, 276/24, 276/25, 276/26, 276/27, 276/29, 276/38, 276/40, 276/41, 276/42, 276/43, 276/44, 319/9, 320/18, 320/42 & 320/47 in Kirna Village, Tilda Tehsil, Raipur District, Chhattisgarh. The proposed additional facilities will be taken up in the project premises of 11.065 Ha (i.e. 27.33 acres). The existing project site has already been approved by CECB.

Total land acquired for theproject is 11.065 Ha.Total land is in possession of the management. Proposed additional facilities will be taken up in the same land. No additional Land envisaged for this proposal.The project cost envisaged for the proposed expansion project is Rs. 37.0Crores.

As per the Ministry of Environment, Forest& Climate Change, New Delhi notification, dated 14thSeptember, 2006 and its subsequent amendments, all Secondary metallurgical processing industries are classified under Category 'B'. The State Environmental Impact Assessment Authority, Chhattisgarh has accorded Terms of Reference (TOR) for the proposed expansion project vide letter No. 602/Industry/Raipur/1560 Naya Raipur, Atalnagar dated 26th June 2021.The EIA Report has been prepared by incorporating the TOR stipulated by SEIAA,Chhattisgarh.

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India, vide certificate No. NABET/ EIA/ 1922/ RA 0149, for preparing EIA report for Metallurgical Units, have prepared Environmental Impact Assessment (EIA) report for the proposed expansion projectby incorporating the TOR approved by Ministry of Environment, Forest & Climate Change, New Delhi. The report contains detailed description of the following:

- Characterization of status of environment with in an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposedexpansion project along with the noise level assessment.
- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development,etc.
- Post Project Environmental Monitoring & Budget for Environmental Protection Measures.

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the project site:

Table No. 1.1: Environment Setting within 10 Km. radius of the site

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
1.	Type of Land	Agricultural Land and same is converted for Industrial use
2.	Type of Land (Study Area)	As per LULC the land use within 10 Km. is as follows: Settlements/Air Strip – 7.2 %; Industrial Area-2.6 %; Tank / River / Major canal etc.– 8.9 %; Single crop – 58.5 %; Double crop – 8.6 %; Plantation – 1.4 %; Land with scrub – 7.7 %; Land without scrub – 3.2 %; Mining area – 1.9 %.
3.	National Park/ Wildlife sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor / migratory routes for Birds	Nil within 10 Km. Radius.
4.	Historical places / Places of Tourist importance / Archeological sites	Nil within 10 Km. Radius.
5.	Critically polluted area as per MoEF&CC Office Memorandum dated 13th January 2010	None And also the Plant area does not fall in the areas given in Hon'ble NGT order issued vide dated 10th July 2019.
6.	Defence Installations	Nil with in 10 Km radius
7.	Nearest village	MeharSakhaVillage - 0.9 kms.(SWW Direction)
8.	Forests	Nil within 10 Km. Radius.
9.	Water body	Kirna Irrigation Channel is passing adjacent to the project site, KulhanNallah (5.1Kms.), Bhatapara (Mahanadi) Branch Canal (2.2Kms.), Kirna tank (2.7 Kms)& Few other seasonal nalas, ponds exists within 10 Km. radius of the plant

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
		site.
10.	Nearest Highway	NH # 200 - 5.8Kms
11.	Nearest Railway Station	BaikunthRS – 4.4Kms.
12.	Nearest Port facility	Nil within 10 Km. Radius.
13.	Nearest Airport	Air Strip – 5.0 Kms
14.	Nearest Interstate Boundary	Nil within 10 Km. Radius.
15.	Seismic zone as per IS-1893	Seismic zone – II
16.	R & R	There is no rehabilitation and resettlement issue, as there are no habitations present in the site area.
17.	Litigation / court case is pending against the proposed project / proposed site and or any direction passed by the court of law against the project	Nil

1.2 PLANT CONFIGURATION AND PRODUCTION CAPACITY

The proposed Steel Plant envisages manufacturing of the following products.

Table No.1.2: Plant Configuration & Production Capacity

S.No.	Unit	Obtained CTE from CECB dated: 10/09/2020	Proposed Additional Facilities	Total after proposed additional facilities
1	Induction Furnace (MS Billets / Ingots / Hot Billets)	30,000 TPA (2 x 6 T)	2,97,000 TPA (6 x 15 T)	3,27,000 TPA (2 x 6 T & 6 x 15 T)
2	Rolling Mill (TMT / Wire Rod/ patra/ and other rerolled products)	30,000 TPA (1 x 90 TPD)	2,91,750 TPA (Upgradation of 90 TPD to 325 TPD & New 2 x 325 TPD)	3,21,750 TPA (3 x 325 TPD)
3	Coal Gasifier	---	1 x 6500 NM^3/Hr	1 x 6500 NM^3/Hr
4	Galvanising unit (HB Wire, GI Wire, Binding Wire, Wed Mesh, Chain Link, Barbed Wire, Weld Mesh, Stay Wire, Cold Dip, Rectifier, Wire Cloth)	1,00,000 TPA	---	1,00,000 TPA

1.3 RAW MATERIAL REQUIRMENT

The following will be the raw material requirement for the proposed project along with its source and mode of transportation is given as below:

Table No.1.3: Raw Material Requirement, Source &Mode of Transport

S.No.	Raw Material		Quantity (TPA)	Sources	Mode of Transport
For Steel Melting Shop (MS Billets / Steel Ingots/Hot Billets) – 2,97,000 TPA					
1	Sponge Iron		2,47,000	Raipur	By Road (through covered trucks)
2	Scrap		1,06,000	Raipur	By road (through covered trucks)
3	Ferro Alloys		4,5000	Raipur	By road (through covered trucks)
For Rolling Mill (TMT / Wire Rod/ patra/ and other rerolled products) – 2,91,750 TPA					
1	MS Billets / Steel Ingots		3,12,100	Own generation	---
2	Furnace oil		5,400	Nearby HPCL / IOCL depots	Tankers
Coal Gasifier (Producer Gas 6500 NM^3/Hr.)					
3	Coal	Indian Coal	21500	SECL, Chhattisgarh	By Rail &Road (through covered trucks)
		(OR)			
		Imported Coal	13,700	Indonesia / Australia	Through sea route, rail route & by road (through covered trucks)

1.4 MANUFACTURING PROCESS

1.4.1 Steel Melting Shop

In Steel Melting Shop (SMS), Sponge Iron will be melted along with melting scrap and fluxes to make pure liquid steel and then to mould it in required size billets. The SMS will consist ofInduction furnaces, Ladles, Cranes & Continuous Casting Machine (CCM). There will be6 X15 T Induction furnaces to manufacture MS Billets / Ingots / Hot Billetsof 2,97,000 TPA. Either the Hot Billets produced from LRF will be directly sent to Rolling Mill without using Re-heating Furnace through Hot charging method (or) Billets / Ingots will be sent to Re-heating Furnace to reheat the Billets and then sent to Rolling Mill to manufacture Rolled Products.The flue gases will be treated in fume extraction system with bagfilters.

1.4.2 Rolling Mill

The Hot Billets produced from Induction Furnaces will be directly sent to Rolling Mill to produce Rolled Products (OR) Hot Billetswill be cooled and stored will be sent to reheating furnaces for the

heating and will be sent to Rolling Mill. Furnace will be heated with producer gas. The proposed Rolling mill will produce 2,91,750 TPAof TMT / Wire Rod/ patra/ and other rerolled products.

1.5 Water Requirement

- The water requirement for project for which consent is taken will be 52 KLD and water requirement for the proposed additional facilities will be 360 KLD and same will be sourced from Ground Water Sources.
- This includes make-up water for Induction Furnace, Rolling Mill& Domestic.
  - Application is submitted to Central Ground Water Authority for obtaining Water permission vide date 08th June 2021for Water drawl permission and is under process.

Table No.1.4: Water Requirement Breakup

S.No.	Unit	Water Requirement (in KLD)		
		Obtained CTE from CECB dated: 10/09/2020	Proposed Additional Facilities	Total after proposed additional facilities
1.	Induction Furnaces	20	130	150
2.	Rolling Mill	5	190	195
3.	Coal Gasifier	10	30	40
4.	Galvanizing unit	15	---	15
5.	Domestic	2	10	12
	Total	**52**	**360**	**412**

1.6 Wastewater Generation

- There will be no effluent discharge from the proposed SMSunits as closed-circuit cooling system will be adopted.
- The effluent generated from Rolling Mill will be sent to settling tank & clear water will be recycled through closed circuit cooling system.
- Sanitary wastewater will be treated in Sewage Treatment Plant (STP) of 10 KLD capacity and treated sewage will be utilised for greenbelt development.
- Zero Liquid effluent Discharge will be maintained in the in the proposed project. The following is the breakup of Wastewater generation quantity.

Table No.1.5: BreakupofWastewater Generation

S.No.	Wastewater generation from	Quantity in KLD
1.	Steel MeltingShop	--
2.	Rolling Mill	--
3.	Sanitary Wastewater	8.0
	Total	**8.0**

1.7 Wastewater Characteristics

The following are the Characteristics of wastewater.

Table No.1.6: Characteristics of Effluent

PARAMETER	CONCENTRATION
	SANITARY WASTE WATER
pH	7.0 – 8.5
BOD (mg/l)	200 – 250
COD (mg/l)	300 – 400
TDS (mg/l)	800 – 900
Oil & Grease (mg/l)	5 - 10
TSS (mg/l)	150-200

2.0 DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio-economic details of people within 10 km radius of the plant.

2.1 Ambient air quality

Ambient air quality was monitored for $PM_{2.5}$, PM_{10}, SO_2, NO_2& CO at 8 stations including project site during 1stOctober 2020 to 31stDecember 2020. The following are the concentrations of various parameters at the monitoring stations:

Table No.2.1 : Ambient Air Quality Summary

S.No.	Parameter		Concentration
1.	$PM_{2.5}$	:	12.6 to 39.2µg/m^3
2.	PM_{10}	:	20.7 to 65.3µg/m^3
3.	SO_2	:	6.2 to 10.2µg/m^3
4.	NO_2	:	7.3 to 19.5µg/m^3
5.	CO	:	306 to 1253µg/m^3

2.2 Water Quality

2.2.1 Surface Water Quality

KulhanNallah&Batapara Branch Mahanadi Canal are flowing at a distance of 5.1Kms. &2.2Kms. from the project site &Kirna Irrigation Channel is passing adjacent to the project site. 8 no. of surface water samples have been collected and analyzed for various parameters. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 Nos. of ground water samples from open wells / bore wells have been collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

2.3 Noise Levels

Noise levels were measured at 8 locations during daytime&Nighttime. The noise levels at the monitoring stations are ranging from 41.40dBA to 53.10 dBA.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed expansion project are PM_{10}, SO_2, NO_2& CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the model.

The predicted max. Incremental PM_{10} concentrations (24 hourly) due to the emissions from operation of proposed projectwill be **0.86µg/m^3**at a distance of 750 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in PM concentration due to the Vehicular emission will be **0.49g/m^3**.

The predicted max incremental SO_2 concentrations (24 hourly) due to the emissions from operation of proposed projectwill be **4.4µg/m^3** at a distance of 750 m from the stack in the down wind direction over the baseline concentrations.

The predicted max incremental NO_2 concentrations (24 hourly) due to the emissions from operation of proposed projectwill be **5.3 µg/m^3** at a distance of 750 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in NO_2 concentration due to the Vehicular emission will be **3.8 µg/m³**.

The predicted incremental rise in CO concentration due to the Vehicular emission will be **2.1 µg/m³**.

The net resultant concentrations (Maximum baseline conc. + predicted incremental rise in conc.) of PM, SO_2 and NO_Xshown in Table No. 3.1,by considering the emissions from other industries in the area will be well within the National Ambient Air Quality Standards (NAAQS) when the plant will commence the operation. Hence there will not be any adverse impact on air environment due to the proposed activities.

Table No.3.1: NET RESULTANT MAXIMUM CONCENTRATIONS DURING THE OPERATION OF THE PROPOSED EXPANSION PROJECT

[Item	PM_{10} (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (µg/m³)
Maximum baseline conc. in the study area	65.3	10.2	19.5	1253
Maximum predicted incremental rise in concentration due to **the proposed expansion Project.**	0.86	4.4	5.3	--
Maximum predicted incremental rise in concentration due to **Vehicular Emissions from the proposed expansion project.**	0.49	--	3.8	2.1
Net resultant concentrations during operation of the proposed expansion project.	**66.65**	**14.6**	**28.6**	**1255.1**
National Ambient Air Quality Standards	**100**	**80**	**80**	**2000**

The net resultant Ground level concentrations during operation of the project are within the NAAQS. Hence there will not be any adverse impact on air environment due to the proposed expansion project.

3.2 Prediction of impacts on Noise quality

The major sources of noise generation in the proposed expansionproject will be motors, DG set, etc. Acoustic enclosures will be provided to the STG. The ambient noise levels will be within the standards prescribed by MoEF vide notification dated 14-02-2000 under the Noise Pollution (Regulation & Control), Rules 2000 i.e. the noise levels will be less than 75 dBA during day time and

less than 70 dBA during night time. 3.78 Ha. (9.34 Acres) of extensive greenbelt will be developed to further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed expansion project.

3.3 Prediction of impacts on Water Environment

Closed loop cooling water system will be adopted in SMS. Effluent from Rolling mill will be treated in oil separator followed by settling tank & will be recycled back. Sanitary wastewater will be treated in Sewage Treatment Plant. Treated sewage will be used for Greenbelt development. There will not be any effluent discharge outside the premises. ZLD will be followed. Hence there will not be any adverse impact on environment due to the proposed expansion project.

3.4 Prediction of Impacts on Land Environment

The effluent will be treated to achieve SPCB standards. Zero effluent discharge will be adopted. All the required air pollution control systems will be provided to comply with CPCB / SPCB norms. All solid wastes will be disposed / utilized as per CPCB / SPCB norms. 3.78 Ha. (9.34 Acres) of extensive greenbelt will be developed as per guidelines. Hence, there will not be any adverse impact on land environment due to the proposed expansionproject.

3.5 Socio - Economic Environment

There will be certain upliftment in Socio Economic status of the people in the area & development of the area due to the proposed project. Developmental activities will be taken up in consultation with village panchayat.Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of SPCB and MoEF&CC are tabulated below:

TABLE NO.4.1: MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water &Waste water quality				
A.	Water quality in the	Once in a month except	Grab sample	As per IS: 10500

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
	area	for heavy metals which will be monitored on quarterly basis.		
B.	STP Inlet & Outlet	Twice in a month	Composite sample (24 hourly)	As per EPA Rules1996
2. Air Quality				
A.	Stack Monitoring	Online monitors (all stacks) Once in a month		PM PM,SO_2& NO_2
B.	Ambient Air quality (CAAQMS)	Continuous	Continuous	$PM_{2.5}$, PM_{10}, SO_2,NO_2& CO
C.	Fugitive emissions	Monthly Once	8 hours	PM
3. Meteorological Data				
	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.
4. Noise level monitoring				
	Ambient Noise levels	Monthly once	Continuous for 24 hours with 1 hour interval	Noise levels

5.0 ADDITIONAL STUDIES

No Rehabilitation and Resettlement is involved in the proposed project as there are no habitations in the project site. Hence no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the establishment of the proposed expansion project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed expansion project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the expansion project:

Table No.7.1: Air Emission Control Systems Proposed

S.No.	Stack attached to	No. of Stacks	Control Equipment	Particulate emission at the outlet
1.	Induction Furnaces 2 x 15 T	1 no. Combined Stack with twin flue	Fume extraction system followed by Bag filter	< 30 mg/Nm^3
2.	Induction Furnaces 2 x 15 T	1 no. Combined Stack with twin flue	Fume extraction system followed by Bag filter	< 30 mg/Nm^3
3.	Induction Furnaces 2 x 15 T	1 no. Combined Stack with twin flue	Fume extraction system followed by Bag filter	< 30 mg/Nm^3
4.	Rolling Mill (1 x 325 TPD)	1 no.	--	< 30 mg/Nm^3
5.	Rolling Mill (1 x 325 TPD)	1 no.	--	< 30 mg/Nm^3
6.	Rolling Mill (1 x 325 TPD)	1 no.	--	< 30 mg/Nm^3

- All conveyors will be completely covered with G.I. sheets to control fugitive dust.
- All bins will be totally packed and covered so that there will not be any chance for dust leakage.
- All discharge points and feed points, wherever the possibility of dust generation is there a de-dusting suction point will be provided to collect the dust.

7.2 Water Environment

- Total wastewater generation from the proposed project will be 8.0 KLD.
- There will be no effluent discharge in the Induction Furnaces as closed-circuit cooling system will be adopted.
- Effluent from Rolling Mill will be sent to oil separator followed by settling tank & will be recycled through closed circuit cooling system.
- Sanitary wastewater will be treated in STP and after ensuring compliance with norms will be utilized for greenbelt development.
- Garland drains will be provided around all the raw material stacking areas.

Treated Sewage Characteristics

S.No.	Parameters	Parameters limit
1.	pH	6.5 – 8.0
2.	BOD (mg/ L)	Not more than 10
3.	COD (mg/ L)	Not more than 50
4.	TSS (mg/ L)	Not more than 20
5.	NH_4-N (mg/ L)	Not more than 5
6.	N-Total (mg/ L)	Not more than 10
7.	Fecal Coliform (MPN/100 ml)	Less than 100

TREATED EFFLUENT DISPOSAL

Effluent to be used for Greenbelt development : 8.0 m^3/day

7.3 Noise Environment

The major sources of noise generation in the proposed expansion project will be motors, DG set, etc. Acoustic enclosure will be provided to DG sets. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels further. Noise barriers in the form of trees are recommended to be grown around administrative block and other utility units.

7.4 Land Environment

The domestic wastewater generated from the proposed expansion project will be treated in the Sewage Treatment Plant to comply with the SPCB standards and will be used for greenbelt development. All the required Air emission control systems will be installed and operated to comply with SPCB norms. Solid wastes will be disposed off as per norms. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed expansion project.

Table No.7.2: Solid Waste Generation and Disposal

S.No.	Waste	Quantity (TPA)	Method of disposal
Induction Furnace:			
1.	Slag	29,700	Slag from SMS will be crushed and iron will be recovered & remaining non-magnetic material being inert by nature will be used as sub base material in road construction / will be

			given to brick manufacturer
Rolling mill :			
2.	Mill scales	3,501	Mill scales will be given to nearby Ferro alloys manufacturing units or casting units.
3.	End cutting	11,085	Recycled back as raw material in own induction Furnaces
Gasifier:			
4.	Tar	461	Will be given to coal tar recyclers / agencies engaged in construction activities / given to nearby Pellet plant units /
5.	Cinder	9,680	Will be given to Cement plant

7.5 Greenbelt Development

Greenbelt of 3.78 Ha. (9.34 Acres) of extensive greenbelt will be developed in the plant premises.

20 m wide greenbelt will be developed all around the project site.

7.6 Cost for Environment Protection

Capital Cost for Environment Protection for proposed plant : Rs.5.70Crores

Recurring Cost per annum for Environmental protection : Rs.82.0 Lakhs